

Set	Items	Description
S1	19206	(VOCABULARY OR VERBAL OR LEXIS OR WORDS OR PHRASEOLOGY OR - THESAURUS OR LEXICON OR DICTIONARY OR GLOSSARY OR WORDBOOK OR TERMINOLOGY) (2N) (TERM OR TERMS OR DESCRIPTOR? OR SUBJECT() HEA- DING OR KEYWORD? OR KEY() (WORD? OR VALUE?))
S2	5413519	MATRIX? OR MATRICES OR TUPLE OR TABLE? OR ARRAY? OR (MATHE- MATICAL OR DATA) () ELEMENT? OR COLUMN? OR ROW? OR GRAPH? OR FAT OR MFAT OR NTFS OR VFAT
S3	38449	(INDEX? OR INDICES OR CATALOG? OR MAP OR MAPS OR MAPPING OR LIST? OR ORGANIZE?) (3N) (DATABASE? OR DATABANK? OR DATA() (BAS- E? OR BANK?) OR DB)
S4	2147452	FACTOR? () OUT OR REMOVE OR DELETE OR SUBTRACT? OR DECREMENT OR EVICTING OR DEDUCT OR REMOVE OR TAKE() AWAY OR REDUCE OR DE- CREASE
S5	990	((NON OR "NOT") () NEGATIVE) (2N) (RESULT? OR SOLUTION? OR ANS- WER? OR CONCLUSION?)
S6	150879	(POSITIVE OR QUANTITY() GREATER() THAN() ZERO) (2N) (RESULT? OR SOLUTION? OR ANSWER? OR CONCLUSION?) OR SOME() RESULT?
S7	0	S1 (S) S2 (S) S3 (S) S4 (S) S5
S8	0	S1 (S) S2 (S) S3 (S) S4 (S) S6
S9	0	S3 (S) S5
S10	18	S3 (S) S6
S11	11206	S2 (S) S6
S12	6	S11 (S) S3
S13	21	S1 (S) S2 (S) S3
S14	132	S2 (S) S5
S15	0	S13 (S) S14
S16	20	S4 (S) S5
S17	0	S13 (S) S16
S18	0	S13 (S) S6
S19	0	S13 (S) S6
S20	18	S3 (S) S6
S21	59	S10 OR S12 OR S13 OR S16 OR S20
S22	55	S21 NOT PY>2001
S23	52	S22 NOT PD>20010522
S24	44	RD (unique items)
File	2:INSPEC 1969-2003/Nov W1	(c) 2003 Institution of Electrical Engineers
File	6:NTIS 1964-2003/Nov W2	(c) 2003 NTIS, Intl Cpyrght All Rights Res
File	8:Ei Compendex(R) 1970-2003/Nov W1	(c) 2003 Elsevier Eng. Info. Inc.
File	34:SciSearch(R) Cited Ref Sci 1990-2003/Nov W1	(c) 2003 Inst for Sci Info
File	35:Dissertation Abs Online 1861-2003/Oct	(c) 2003 ProQuest Info&Learning
File	65:Inside Conferences 1993-2003/Nov W2	(c) 2003 BLDSC all rts. reserv.
File	92:IHS Intl.Stds.& Specs. 1999/Nov	(c) 1999 Information Handling Services
File	94:JICST-EPlus 1985-2003/Nov W2	(c) 2003 Japan Science and Tech Corp(JST)
File	95:TEME-Technology & Management 1989-2003/Oct W3	(c) 2003 FIZ TECHNIK
File	99:Wilson Appl. Sci & Tech Abs 1983-2003/Sep	(c) 2003 The HW Wilson Co.
File	103:Energy SciTec 1974-2003/Oct B2	(c) 2003 Contains copyrighted material
File	144:Pascal 1973-2003/Nov W1	(c) 2003 INIST/CNRS
File	202:Info. Sci. & Tech. Abs. 1966-2003/Sep 16	(c) 2003 EBSCO Publishing
File	233:Internet & Personal Comp. Abs. 1981-2003/Jul	(c) 2003, EBSCO Pub.
File	239:Mathsci 1940-2003/Dec	(c) 2003 American Mathematical Society
File	275:Gale Group Computer DB(TM) 1983-2003/Nov 07	

(c) 2003 The Gale Group  
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info  
File 647:CMP Computer Fulltext 1988-2003/Sep W3  
(c) 2003 CMP Media, LLC  
File 674:Computer News Fulltext 1989-2003/Nov W1  
(c) 2003 IDG Communications  
File 696:DIALOG Telecom. Newsletters 1995-2003/Nov 09  
(c) 2003 The Dialog Corp.

24/5,K/3 (Item 3 from file: 2)

DIALOG(R) File 2:INSPEC

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5190240 INSPEC Abstract Number: C9603-6160K-007

**Title: The application of multi-dimensional indexing methods to constraints**

Author(s): Freeston, M.

Author Affiliation: ECRC, Munich, Germany

Conference Title: Constraint Databases and Applications. ESPRIT WG CONTESSA Workshop. Proceedings p.102-19

Editor(s): Kuper, G.; Wallace, M.

Publisher: Springer-Verlag, Berlin, Germany

Publication Date: 1996 Country of Publication: West Germany 185 pp.

ISBN: 3 540 60794 3 Material Identity Number: XX96-00333

Conference Title: Constraint Databases and Applications. ESPRIT WG CONTESSA Workshop. Proceedings

Conference Sponsor: ESPIRIT

Conference Date: 8-9 Sept. 1995 Conference Location: Friedrichshafen, Germany

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

**Abstract:** Essentially, the constraint programming paradigm attempts to find solutions to problems by finding those points or regions within the data space which satisfy all the constraints of the problem. The art of constraint programming is to find ways of narrowing down the search space as much as possible with as little computational effort as possible. In **databases**, this is what **indexes** are for. And yet surprisingly little effort has so far been devoted to developing efficient constraint **database indexing**. We show how recent advances in multi dimensional indexing techniques can be applied to constraint indexing, and give **some results** for the complexity of access and update operations using these techniques.

(15 Refs)

Subfile: C

Descriptors: constraint handling; deductive databases; indexing; information retrieval

Identifiers: multi dimensional indexing methods; multi-dimensional indexing methods; constraint programming paradigm; data space; search space; constraint database indexing; complexity; update operations

Class Codes: C6160K (Deductive databases); C6110L (Logic programming); C7250R (Information retrieval techniques); C7240 (Information analysis and indexing)

Copyright 1996, IEE

...Abstract: narrowing down the search space as much as possible with as little computational effort as possible. In **databases**, this is what **indexes** are for. And yet surprisingly little effort has so far been devoted to developing efficient constraint **database indexing**. We show how recent advances in multi dimensional indexing techniques can be applied to constraint indexing, and give **some results** for the complexity of access and update operations using these techniques.

24/5,K/4 (Item 4 from file: 2)

DIALOG(R) File 2:INSPEC

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4998224 INSPEC Abstract Number: C9508-7240-006

**Title: RLDOC: document networks for the management of information**

Author(s): Buray, G.

Author Affiliation: Resoudre SA, Palaiseau, France

Conference Title: Proceedings of Language Engineering Convention p.23

Publisher: Eur. Network in Language & Speech, Edinburgh, UK

Publication Date: 1994 Country of Publication: UK xvi+155 pp.

ISBN: 0 9524422 0 5

Conference Title: Proceedings of Language Engineering Convention

Conference Date: 6-7 July 1994 Conference Location: Paris, France

Availability: ELSNE, Centre for Cognitive Science, University of Edinburgh, 2 Buccleuch Place, Edinburgh, UK

Language: English; French Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: The management of structured information is considered. One the most important applications is monitoring information about the competition and other technologies. The main feature of this type of management system is that the information is linked together and only gains its meaning when placed in context. We take the perspective that information is organized within documents from different sources (internal, hardcopy, external data bases, etc.) and many types of storage (bit map picture, computerized, etc.). For those types of information, **organized** within traditional **databases**, searching by **key words**, **thesaurus**, full text, or natural language, hypertext, only partially answers user needs. RLDOC provides a different and complementary approach. The main feature of this software is the flexibility with which it constructs a multi-relational database. RLDOC allows semantic links to be established between documents and thereby obtains a model which resembles a knowledge representation. Searching within the stock of information combines traditional techniques (**key words**, **thesaurus**, full text) and **graphical** and contextual navigation, within the network of documents-words. The software has applications in various fields: information monitoring, especially of technology and the competition, managing the "collective memory" of companies, managing administrative files and managing statutory texts and administrative procedures. (0 Refs)

Subfile: C

Descriptors: document handling; full-text databases; knowledge representation; management information systems; relational databases; thesauri

Identifiers: structured information management; document networks; information monitoring; competition; documents; storage; sources; databases; RLDOC; TLC90 program; prototype industrial system; software; multi-relational database; semantic links; knowledge representation; searching; contextual navigation; graphical navigation; key words; thesaurus; full text; technology

Class Codes: C7240 (Information analysis and indexing); C6160D (Relational databases); C7250L (Non-bibliographic retrieval systems); C6130D (Document processing techniques); C6170K (Knowledge engineering techniques); C7100 (Business and administration)

Copyright 1995, IEE

...Abstract: bases, etc.) and many types of storage (bit map picture, computerized, etc.). For those types of information, **organized** within traditional **databases**, searching by **key words**, **thesaurus**, full text, or natural language, hypertext, only partially answers user needs. RLDOC provides a different and complementary...

... obtains a model which resembles a knowledge representation. Searching within the stock of information combines traditional techniques (**key words**, **thesaurus**, full text) and **graphical** and contextual navigation, within the network of documents-words. The software has applications in various fields: information...

24/5,K/5 (Item 5 from file: 2)

DIALOG(R) File 2:INSPEC

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4777804 INSPEC Abstract Number: C9411-6115-038

Title: A hypertext information system for reusable software component retrieval

Author(s): Sedes, F.

Author Affiliation: Inst. de Recherche en Inf., Univ. Paul Sabatier, Toulouse, France

p.457-62

Editor(s): Tjoa, A.M.; Ramos, I.

Publisher: Springer-Verlag, Wien, Austria

Publication Date: 1992 Country of Publication: Austria xii+546 pp.  
ISBN: 3 211 82400 6

Conference Title: Proceedings of DEXA '92. International Conference on Database and Expert Systems Applications

Conference Date: 2-4 Sept. 1992 Conference Location: Valencia, Spain

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Software component reusability in an industrial context supposes integrating and acting on information about software objects (programs, functions, requirements, design documents, diagrams, figures, pictures etc.) gathered in the same database. Software engineering activities (specification, design, programming etc.) imply the implementation of tools to retrieve an object by using the information which characterizes its content. Therefore, the problem is to **organize** this information **database** in order to allow the user (software designer, maintenance operator etc.) to locate as fast and easily as possible information corresponding to the needs he expresses. We present a reusable object retrieval system handling a large hypermedia database through a visual representation of the objects and their associations. Our modelling is based on content analysis, automatic classification and hypertext browsing and navigation. This environment allows one to integrate information in an incremental way, at any stage of the database manipulation, to design associative networks between objects (thesaurus, conceptual **graph**, component similarity etc.) and to offer a direct interaction to the user. SYRIUS is a hypertext information retrieval system using natural language queries possibly associated to a multicriteria retrieval. Its friendliness and high interactiveness lies in the visual interface which supplies a **graphic** representation and a direct manipulation of any information structure. Network structures are indeed used for displaying and defining intercomponent associations, associative **thesaurus** of **terms**, and classification criteria. An evaluation of the system shows the interest of such an approach which provides help in tackling the difficulties of orientation and navigation in large and complex information databases. Its implementation validated these concepts.  
(20 Refs)

Subfile: C

Descriptors: classification; computer graphics; hypermedia; object-oriented databases; software reusability; subroutines; thesauri; user interfaces; visual databases

Identifiers: hypertext information system; reusable software component retrieval; industrial context; software objects; software engineering activities; user; reusable object retrieval system; hypermedia database; visual representation; modelling; content analysis; automatic classification; hypertext browsing; navigation; associative networks; SYRIUS; natural language queries; multicriteria retrieval; visual interface; graphic representation; intercomponent associations

Class Codes: C6115 (Programming support); C6110J (Object-oriented programming); C6160J (Object-oriented databases); C6160S (Spatial and pictorial databases); C6180 (User interfaces)

...Abstract: to retrieve an object by using the information which characterizes its content. Therefore, the problem is to **organize** this information **database** in order to allow the user (software designer, maintenance operator etc.) to locate as fast and easily...

... incremental way, at any stage of the database manipulation, to design associative networks between objects (thesaurus, conceptual **graph**, component similarity etc.) and to offer a direct interaction to the user. SYRIUS is a hypertext information...

... to a multicriteria retrieval. Its friendliness and high interactiveness lies in the visual interface which supplies a **graphic** representation and a direct manipulation of any information structure. Network structures are indeed used for displaying and defining intercomponent associations, associative **thesaurus** of **terms**, and classification criteria. An evaluation of the system shows the interest of such an approach which provides...

24/5,K/7 (Item 7 from file: 2)

DIALOG(R) File 2:INSPEC

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04092227 INSPEC Abstract Number: A9207-4210-001, C9204-4260-002

**Title:** An updated cross-indexed guide to the ray-tracing literature

**Author(s):** Speer, L.R.

**Journal:** Computer Graphics vol.26, no.1 p.41-72

**Publication Date:** Jan. 1992 **Country of Publication:** USA

**CODEN:** CGRADI **ISSN:** 0097-8930

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Bibliography (B)

**Abstract:** This bibliography is an update to that in Computer Graphics Forum, vol.10, no.2, p.145 (June 1991), and it contains a glossary of the keywords used for indexing; an index to the database by keyword, an index by author; and finally the actual references. (527 Refs)

**Subfile:** A C

**Descriptors:** computational geometry; computer graphics; geometrical optics; reviews

**Identifiers:** computer graphics; computational geometry; cross-indexed guide; ray-tracing literature; bibliography; glossary

**Class Codes:** A4210D (Wave-front and ray tracing); A0130T (Bibliographies); C4260 (Computational geometry); C6130B (Graphics techniques)

**Abstract:** This bibliography is an update to that in Computer Graphics Forum, vol.10, no.2, p.145 (June 1991), and it contains a glossary of the keywords used for indexing; an index to the database by keyword, an index by author; and finally the actual references.

24/5,K/8 (Item 8 from file: 2)

DIALOG(R) File 2:INSPEC

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04063255 INSPEC Abstract Number: C9202-6120-061

**Title:** Minimum boundary-length problem in B\*-trees: a case study

**Author(s):** Gagliardi, I.; Merelli, D.

**Author Affiliation:** Istituto di Fisica Cosmica e Tecnologie Relative, CNR, Milano, Italy

**Journal:** Information Systems vol.16, no.5 p.559-64

**Publication Date:** 1991 **Country of Publication:** UK

**CODEN:** INSYD6 **ISSN:** 0306-4379

**U.S. Copyright Clearance Center Code:** 0306-4379/91/\$3.00+0.00

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Practical (P); Theoretical (T)

**Abstract:** B-trees are suitable data structures for index terms in a database or in an information retrieval system. B\*-trees optimize the characteristics of B-trees. The authors present an algorithm for optimization of the pagination of a B\*-tree with variable-length keyed records. They also present some results obtained in the application of this algorithm, compared with the application of a B-tree with variable-length keys. (10 Refs)

**Subfile:** C

**Descriptors:** data structures; information retrieval; search problems; trees (mathematics)

**Identifiers:** minimum boundary-length problem; data structures; index terms; database; information retrieval system; B\*-trees; optimization; variable-length keyed records

**Class Codes:** C6120 (File organisation); C1180 (Optimisation techniques)

**Abstract:** B-trees are suitable data structures for index terms in a database or in an information retrieval system. B\*-trees optimize the characteristics of B-trees. The authors present...

... for optimization of the pagination of a B\*-tree with variable-length

keyed records. They also present some results obtained in the application of this algorithm, compared with the application of a B-tree with variable...

24/5,K/9 (Item 9 from file: 2)

DIALOG(R)File 2:INSPEC

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04005760 INSPEC Abstract Number: C91073615

**Title: Document ranking using an enriched thesaurus**

Author(s): Rada, R.; Barlow, J.; Potharst, J.; Zanstra, P.; Bustra, D.

Author Affiliation: Dept. of Comput. Sci., Liverpool Univ., UK

Journal: Journal of Documentation vol.47, no.3 p.240-53

Publication Date: Sept. 1991 Country of Publication: UK

CODEN: JDOCAS ISSN: 0022-0418

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: A thesaurus may be viewed as a **graph**, and document retrieval algorithms can exploit this **graph** when both the documents and the query are represented by **thesaurus terms**. These retrieval algorithms measure the distance between the query and documents by using the path lengths in the **graph**. Previous work with such strategies has shown that the hierarchical relations in the thesaurus are useful but the non-hierarchical relations are not. This paper shows that when the query explicitly mentions a particular non-hierarchical relation, the retrieval algorithm benefits from the presence of such relations in the thesaurus. The authors algorithms were applied to the Excerpta Medica bibliographic citation **database** whose citations are **indexed** with terms from the EMTREE thesaurus. The authors also created an enriched EMTREE by systematically adding non-hierarchical relations from a medical knowledge base. Their algorithms used at one time EMTREE and, at another time, the enriched EMTREE in the course of ranking documents from Excerpta Medica against queries. When, and only when, the query specifically mentioned a particular non-hierarchical relation type, did EMTREE enriched with that relation type lead to a ranking that better corresponded to an expert's ranking. (20 Refs)

Subfile: C

Descriptors: information retrieval; thesauri

Identifiers: document ranking; enriched thesaurus; document retrieval algorithms; hierarchical relations; Excerpta Medica bibliographic citation database; EMTREE thesaurus; medical knowledge base

Class Codes: C7250 (Information storage and retrieval); C7240 (Information analysis and indexing)

Abstract: A thesaurus may be viewed as a **graph**, and document retrieval algorithms can exploit this **graph** when both the documents and the query are represented by **thesaurus terms**. These retrieval algorithms measure the distance between the query and documents by using the path lengths in the **graph**. Previous work with such strategies has shown that the hierarchical relations in the thesaurus are useful but...

... of such relations in the thesaurus. The authors algorithms were applied to the Excerpta Medica bibliographic citation **database** whose citations are **indexed** with terms from the EMTREE thesaurus. The authors also created an enriched EMTREE by systematically adding non...

24/5,K/12 (Item 12 from file: 2)

DIALOG(R)File 2:INSPEC

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00209875 INSPEC Abstract Number: C71000088

**Title: Mathematical programming and the numerical solution of linear equations**

Author(s): Rust, B.W.; Burrus, W.R.

Issued by: Tennecomp Inc., Oak Ridge, TN, USA

Publication Date: March 1970 Country of Publication: USA 335 pp.

Report Number: TPR-01 NASA-2393-1 Contract Number: SA01-68-C-0117

U.S. Govt. Clearinghouse Number: AD703663

Availability: CFSTI, Springfield, VA 22151, USA

Language: English Document Type: Report (RP)

**Abstract:** The book is concerned with the use of mathematical programming techniques for solving ill-conditioned systems of linear equations with various kinds of errors in the right hand side vector. The primary motivation for the work was the spectrum unfolding problem of experimental physics, so the treatment also includes the Fredholm integral equation of the first kind, which can be considered to be an infinite dimensional ill-conditioned system. The basic idea of the new techniques which are developed is the use of a priori knowledge about the solution in order to greatly **reduce** the size of the class of solutions which are consistent with the right hand side errors. The methods are designed to give interval estimates for the solution-the sizes of the intervals being determined by the sizes of the errors in the right hand side, and the constraints imposed on the class of acceptable solutions by the a priori information. The basic a priori constraint which is used is that the **solution** must be **non - negative** but it is shown that many other a priori constraints can be reduced to a simple non-negativity constraint by a suitable transformation of variables. When the non-negativity constraint is taken into account, the problem of estimating lower and upper bounds for the solution can be formulated and solved as a mathematical programming problem. The book treats both the case where the right hand side errors are known absolutely to lie in some bounded region and also the case where the errors are normally distributed.

Subfile: B C

Descriptors: integral equations; linear algebra; linearisation techniques ; mathematical programming; numerical analysis

Class Codes: B0260 (Optimisation techniques); C1180 (Optimisation techniques); C4140 (Linear algebra)

...Abstract: which are developed is the use of a priori knowledge about the solution in order to greatly **reduce** the size of the class of solutions which are consistent with the right hand side errors. The...

... solutions by the a priori information. The basic a priori constraint which is used is that the **solution** must be **non - negative** but it is shown that many other a priori constraints can be reduced to a simple non ...

24/5,K/17 (Item 5 from file: 6)

DIALOG(R) File 6:NTIS

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0881633 NTIS Accession Number: ORNL/TM-6593/R1/XAB

**Separations Systems Data Base: A Users' Manual. Revision I**

Roddy, J. W. ; McDowell, W. J.

Oak Ridge National Lab., TN.

Corp. Source Codes: 021310000; 4832000

Sponsor: Department of Energy, Washington, DC.

Jan 81 37p

Languages: English

Journal Announcement: GRAI8112; NSA0600

Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

Contract No.: W-7405-ENG-26

A separations systems data base (SEPSYS), designed specifically for the retrieval of information needed in chemical separations problems (i.e., how to perform a given separation under given conditions), is described. Included are descriptions of the basic methods of searching and retrieving information from the data base, the procedure for entering records into the



**data base**, a listing of additional references concerning the computer information process, and an example of a typical record. The initial entries are concerned primarily with liquid-liquid extraction and liquid-solid ion exchange methods for metal ions and salts; however, the data base is constructed so that almost any separation process can be accommodated. Each record is indexed with information provided under the following fields: author; title; publication source; date of publication; organization sponsoring the work; brief abstract of the work; abstract number if the work has been so referenced, and/or abstractors initials; type of separation system used (e.g., flotation); specific or generic name of the separation agent used (e.g., acetylacetone); list of substances separated (e.g., gold, copper); qualitative description of the supporting medium or **matrix** containing the substances before separation (e.g., nitrate); type of literature where the record was printed (e.g., book); and type of information that the article contains. Each of these fields may be searched independently of the others (or in combination), and the last six fields contain specific **key words** that are listed in the report. Definitions are provided for the 36 information terms. (ERA citation 06:008008)

Descriptors: \*Separation processes; Chemical analysis; Information retrieval; Information systems; Manuals

Identifiers: ERDA/400105; ERDA/990300; NTISDE

Section Headings: 99A (Chemistry--Analytical Chemistry); 88B (Library and Information Sciences--Information Systems)

... methods of searching and retrieving information from the data base, the procedure for entering records into the **data base**, a listing of additional references concerning the computer information process, and an example of a typical record. The initial...

... g., acetylacetone); list of substances separated (e.g., gold, copper); qualitative description of the supporting medium or **matrix** containing the substances before separation (e.g., nitrate); type of literature where the record was printed (e...

...may be searched independently of the others (or in combination), and the last six fields contain specific **key words** that are listed in the report. Definitions are provided for the 36 information terms. (ERA citation 06...

24/5,K/18 (Item 1 from file: 8)  
DIALOG(R)File 8:Ei Compendex(R)  
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03351341 E.I. Monthly No: EIM9112-063025

**Title: Quadratic differential games with overtaking optimality.**

Author: Ichikawa, Akira

Corporate Source: Shizuoka Univ, Hamamatsu, Jpn

Conference Title: Proceedings of the 4th International Symposium on Differential Games and Applications

Conference Location: Helsinki, Finl Conference Date: 19900809

E.I. Conference No.: 15036

Source: Lecture Notes in Control and Information Sciences v 156. Publ by Springer-Verlag Berlin, Dept ZSW, Berlin 33, Ger. p 207-215

Publication Year: 1991

CODEN: LCISDU ISSN: 0170-8643

Language: English

Document Type: PA; (Conference Paper) Treatment: T; (Theoretical)

Journal Announcement: 9112

Abstract: It is known that values and optimal pairs of infinite-time quadratic differential games for linear time-invariant systems are given by **non - negative solutions** of algebraic Riccati equations left bracket 11 right bracket - left bracket 13 right bracket . Riccati equations of the same type also play an important role in the recent H// infinity theory left bracket 7 right bracket and in the stabilization of uncertain systems left bracket 14 right bracket , left bracket 15 right bracket . The problem

of tracking periodic signals for a time-invariant linear system has been considered by Artstein and Leizarowitz left bracket 1 right bracket . It is an infinite-time problem and the notion of overtaking optimality is used. We have generalized their results to time-varying systems left bracket 9 right bracket . Closely related problems are considered in Da Prato and Ichikawa left bracket 5 right bracket , left bracket 6 right bracket . In this paper we consider infinite-time quadratic differential games for time-varying systems and the differential game version of the tracking problems. In section 2 we study Riccati equations over an infinite horizon and give sufficient conditions for the existence of bounded solutions. We show that bounded stable solutions of Riccati equations give values and optimal pairs of quadratic games. In section 3 we consider the tracking problems and characterize optimal pairs in the overtaking sense. We also consider a special case where ideal inputs and a response to the given signal exist. We then introduce a more natural payoff function and **reduce** the problem to an infinite-time quadratic game considered in section 2.

(Author abstract) 16 Refs.

Descriptors: \*PROBABILITY--\*Game Theory; MATHEMATICAL TECHNIQUES

Identifiers: DIFFERENTIAL GAMES

Classification Codes:

922 (Statistical Methods); 921 (Applied Mathematics)

92 (ENGINEERING MATHEMATICS)

...Abstract: and optimal pairs of infinite-time quadratic differential games for linear time-invariant systems are given by **non - negative solutions** of algebraic Riccati equations left bracket 11 right bracket - left bracket 13 right bracket . Riccati equations of...

...and a response to the given signal exist. We then introduce a more natural payoff function and **reduce** the problem to an infinite-time quadratic game considered in section 2. (Author abstract) 16 Refs.

24/5,K/22 (Item 4 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

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01374003 Genuine Article#: GT963 Number of References: 10

Title: **MINIMUM BOUNDARY-LENGTH PROBLEM IN B-STAR-TREES - A CASE-STUDY**

Author(s): GAGLIARDI I; MERELLI D

Corporate Source: CNR,IST FIS COSM & TECNOL RELAT,VIA AMPERE 56/I-20131

MILAN//ITALY//; CENS,DPHPE,SEIPE/F-91191 GIF SUR YVETTE//FRANCE/

Journal: INFORMATION SYSTEMS, 1991, V16, N5, P559-564

Language: ENGLISH Document Type: NOTE

Geographic Location: ITALY; FRANCE

Subfile: SciSearch; CC ENGI--Current Contents, Engineering, Technology & Applied Sciences

Journal Subject Category: COMPUTER APPLICATIONS & CYBERNETICS

Abstract: B-trees are suitable data structures for **index** terms in a **database** or in an information retrieval system. B\*-trees optimize the characteristics of B-trees. In this paper we present an algorithm for optimization of the pagination of a B\*-tree with variable-length keyed records. We also present **some results** obtained in the application of this algorithm, compared with the application of a B-tree with variable-length keys.

Descriptors--Author Keywords: ANALYSIS OF ALGORITHMS; DATA STRUCTURE; B-TREE; B-STAR-TREE

Identifiers--KeyWords Plus: VARIABLE-LENGTH; PAGINATION

Research Fronts: 89-0548 002 (DYNAMIC PLANAR POINT LOCATION; GEODESIC VORONOI DIAGRAM; CLUSTER SET OF THE LIL SEQUENCE; SIMPLE POLYGONS; HIERARCHICAL REPRESENTATIONS)

89-2672 002 (PARALLEL LOGIC PROGRAMMING; INTELLIGENT TEXT RETRIEVAL-SYSTEM; BIBLIOGRAPHIC DATABASES)

Cited References:

BAYER R, 1972, V1, P173, ACTA INFORM

BORDOGNA G, 1990, V16, P229, J INFORM SCI

BORDOGNA G, 1990, V16, P165, J INFORM SCI

COMER D, 1979, V11, P121, ACM COMPUT SURV  
DIEHR G, 1984, V27, P241, COMMUN ACM  
KNUTH DE, 1973, V3, ART COMPUTER PROGRAM  
MCCREIGHT EM, 1977, V20, P670, COMMUN ACM  
SALTON G, 1989, AUTOMATIC TEXT PROCE  
SALTON G, 1983, INTRO MODERN INFORMA  
VANRIJSBERGEN CJ, 1979, INFORMATION RETRIEVA

Abstract: B-trees are suitable data structures for **index** terms in a **database** or in an information retrieval system. B\*-trees optimize the characteristics of B-trees. In this paper...

...for optimization of the pagination of a B\*-tree with variable-length keyed records. We also present **some results** obtained in the application of this algorithm, compared with the application of a B-tree with variable...

24/5,K/24 (Item 1 from file: 103)

DIALOG(R)File 103:Energy SciTec

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04689383 EDB-01-038627

**Title: A Spatial Discretization Scheme for Solving the Transport Equation on Unstructured Grids of Polyhedra**

Author(s)/Editor(s): Thompson, K.G.

Corporate Source: Los Alamos National Lab., NM (United States)

Sponsoring Organization: DOE; US Department of Energy (United States)

Publication Date: 1 Nov 2000

(4097 Kilobytes p)

Report Number(s): LA-13664-T

Order Number: DE00775871

Contract Number (DOE): W-7405-ENG-36

Note: Thesis information not supplied

Academic Degree: Thesis

Document Type: Miscellaneous; Dissertation or Thesis

Language: English

Programming Language: PDF Normal

Contact: Doris Gula^ (505) 667-6581^ dgula@lanl.gov

Journal Announcement: EDB0109

Availability: INIS; OSTI as DE00775871; PURL:

<https://www.osti.gov/servlets/purl/775871-Kv5WJu/webviewable/>

Subfile: ETD (Energy Technology Data Exchange); INS (US Atomindex input).

US DOE Project/NonDOE Project: P

Country of Origin: United States

Country of Publication: United States

Abstract: In this work, we develop a new spatial discretization scheme that may be used to numerically solve the neutron transport equation. This new discretization extends the family of corner balance spatial discretizations to include spatial grids of arbitrary polyhedra. This scheme enforces balance on subcell volumes called corners. It produces a lower triangular matrix for sweeping, is algebraically linear, is non-negative in a source-free absorber, and produces a robust and accurate solution in thick diffusive regions. Using an asymptotic analysis, we design the scheme so that in thick diffusive regions it will attain the same solution as an accurate polyhedral diffusion discretization. We then refine the approximations in the scheme to **reduce** numerical diffusion in vacuums, and we attempt to capture a second order truncation error. After we develop this Upstream Corner Balance Linear (UCBL) discretization we analyze its characteristics in several limits. We complete a full diffusion limit analysis showing that we capture the desired diffusion discretization in optically thick and highly scattering media. We review the upstream and linear properties of our discretization and then demonstrate that our scheme captures strictly **non - negative solutions** in source-free purely absorbing media. We then demonstrate the minimization of numerical

diffusion of a beam and then demonstrate that the scheme is, in general, first order accurate. We also note that for slab-like problems our method actually behaves like a second-order method over a range of cell thicknesses that are of practical interest. We also discuss why our scheme is first order accurate for truly 3D problems and suggest changes in the algorithm that should make it a second-order accurate scheme. Finally, we demonstrate 3D UCBL's performance on several very different test problems. We show good performance in diffusive and streaming problems. We analyze truncation error in a 3D problem and demonstrate robustness in a coarsely discretized problem that contains sharp boundary layers. We also examine eigenvalue and fixed source problems with mixed-shape meshes, anisotropic scattering and multi-group cross sections. Finally, we simulate the MOX fuel assembly in the Advance Test Reactor.

Descriptors: ALGORITHMS; BOUNDARY LAYERS; CROSS SECTIONS; DIFFUSION; EIGENVALUES; NEUTRON TRANSPORT; PERFORMANCE; SCATTERING; TEST REACTORS; DISCRETE ORDINATE METHOD; MIXED OXIDE FUELS

Broader Terms: MATHEMATICAL LOGIC; LAYERS; NEUTRAL-PARTICLE TRANSPORT; RESEARCH AND TEST REACTORS; TEST FACILITIES; CALCULATION METHODS; SOLID FUELS; RADIATION TRANSPORT; REACTORS; FUELS

Subject Categories:

INIS Subject Categories: S99

S22\*

S73

...Abstract: same solution as an accurate polyhedral diffusion discretization. We then refine the approximations in the scheme to **reduce** numerical diffusion in vacuums, and we attempt to capture a second order truncation error. After we develop...

...review the upstream and linear properties of our discretization and then demonstrate that our scheme captures strictly **non - negative solutions** in source-free purely absorbing media. We then demonstrate the minimization of numerical diffusion of a beam...

24/5,K/28 (Item 1 from file: 202)

DIALOG(R)File 202:Info. Sci. & Tech. Abs.

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3000950

**Non-text object storage and retrieval.**

Author(s): Rosenbaum, W S

Patent Number(s): US 5404435

Publication Date: Apr 4, 1995

Language: English

Document Type: Patent

Record Type: Abstract

Journal Announcement: 3000

The presence of a non-text object is sensed in a mixed object document to be archived in an information retrieval system. In addition to text objects, a mixed object document can contain non-text objects such as image objects, **graphics** objects, formatted objects, font objects, voice objects, video objects and animation objects. This enables the creation of **key words** which characterize the non-text object, for incorporation in the inverted file **index** of the **data base**, thereby enabling the later retrieval of either the entire document or the independent retrieval of the non-text object through the use of such **key words**.

Descriptors: Information retrieval systems; Information storage; Keywords; Multimedia systems

Classification Codes and Description: 5.11 (Searching and Retrieval); 5.07 (Storage)

Main Heading: Information Processing and Control

...addition to text objects, a mixed object document can contain non-text

objects such as image objects, **graphics** objects, formatted objects, font objects, voice objects, video objects and animation objects. This enables the creation of **key words** which characterize the non-text object, for incorporation in the inverted file **index** of the **data base**, thereby enabling the later retrieval of either the entire document or the independent retrieval of the non-text object through the use of such **key words**.

24/5,K/29 (Item 2 from file: 202)  
DIALOG(R)File 202:Info. Sci. & Tech. Abs.  
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2604263

**Document ranking using an enriched thesaurus.**

Author(s): Rada, R; Potharst, J; Zanstra, P; Bijstra, D  
Corporate Source: Univ. of Liverpool, Liverpool, England  
Journal of Documentation vol. 47, no. 3, pages 240-253  
Publication Date: Sep 1991  
ISSN: 0022-0418  
Language: English  
Document Type: Journal Article  
Record Type: Abstract  
Journal Announcement: 2600

A thesaurus may be viewed as a **graph**, and document retrieval algorithms can exploit this **graph** when both the documents and the query are represented by **thesaurus terms**. These retrieval algorithms measure the distance between the query and documents by using the path lengths in the **graph**. Previous work with such strategies has shown that the hierarchical relations in the thesaurus are useful but the non-hierarchical relations are not. This paper shows that when the query explicitly mentions a particular non-hierarchical relation, the retrieval algorithm benefits from the presence of such relations in the thesaurus. The algorithms were applied to the Excerpta Medica bibliographic citation **database** whose citations are **indexed** with terms from the EMTREE thesaurus. The authors also created an enriched EMTREE by systematically adding non-hierarchical relations from a medical knowledge base. The algorithms used EMTREE and, at another time, the enriched EMTREE in the course of ranking documents from Excerpta Medica against queries. Only when the query specifically mentioned a particular non-hierarchical relation type, did EMTREE enriched with that relation type lead to a ranking that better corresponded to an expert's ranking.

Descriptors: Algorithms; Citations; Documents; Graph processing  
Classification Codes and Description: 4.07 (Classification, Indexing, and Thesauri); 1.00 (General Aspects); 6.10 (Law)  
Main Heading: Information Recognition and Description; Information Science and Documentation; Information Systems and Applications

A thesaurus may be viewed as a **graph**, and document retrieval algorithms can exploit this **graph** when both the documents and the query are represented by **thesaurus terms**. These retrieval algorithms measure the distance between the query and documents by using the path lengths in the **graph**. Previous work with such strategies has shown that the hierarchical relations in the thesaurus are useful but...  
...presence of such relations in the thesaurus. The algorithms were applied to the Excerpta Medica bibliographic citation **database** whose citations are **indexed** with terms from the EMTREE thesaurus. The authors also created an enriched EMTREE by systematically adding non...

24/5,K/30 (Item 1 from file: 233)  
DIALOG(R)File 233:Internet & Personal Comp. Abs.  
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00483315 98SE01-003

**Caulking the cracks: Scholarly social science resources on the Web**

McDermott, Irene E

Searcher: The Magazine for Database Professionals , January 1, 1998 , v6  
n1 p18-24, 7 Page(s)  
ISSN: 1070-4795

Languages: English

Document Type: Articles, News & Columns

Geographic Location: United States

INTERNET EXPRESS **column** presents an overview of social science resources on the Web. Says the research problem is the main factor that determines how useful Web information resources will be. Explains that while the Web facilitates access to a variety of information access and serves as a vital conduit for scholarly communication, it lacks a single point of access to information and does not provide the same precision as a **database** with controlled **indexing** and **vocabulary terms** . Adds that it is useful to consider very different resources when researching a social science topic. Contains brief descriptions and addresses of specific social science Web sites. Includes three screen displays. (dpm)

Descriptors: Social Science; Information Sources; Web Sites; Research

INTERNET EXPRESS **column** presents an overview of social science resources on the Web. Says the research problem is the main...

... lacks a single point of access to information and does not provide the same precision as a **database** with controlled **indexing** and **vocabulary terms** . Adds that it is useful to consider very different resources when researching a social science topic. Contains...

24/5,K/31 (Item 2 from file: 233)

DIALOG(R) File 233:Internet & Personal Comp. Abs.

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00390668 95LK07-005

**A search strategist explores Knowledge Index**

Bjorner, Susanne

LINK-UP , July 1, 1995 , v12 n4 p3, 14-15, 32 Page(s)

ISSN: 0739-988X

Company Name: Steve McIntosh

Product Name: Kwik Knowledge

Languages: English

Document Type: Feature Articles and News

Geographic Location: United States

THE KI COMPANION **column** reviews Kwik Knowledge database scanning software from Steve McIntosh. Says a click on the Computers and Electronics category brings: up the Business Software **database** ; Microcomputer **Index** ; Computer **Database** ; Ei Compendex Plus; Buyers Guide to Micro Software; Computer News Fulltext; INSPEC; Microcomputer Software Guide; and MathSci. Adds that each database features a single-screen description that gives format informatio and subject scope of the database. Remarks that the Business Software database contains directory and review records with controlled **vocabulary** indexing **terms** and basic product information. Notes that abstracts of journal articles describing and evaluatin the product and complete bibliographic citations are include review records. Discusses search strategies in Business Soft **database** and Microcomputer **Index** and results. Contains three screen displays. (KLB)

Descriptors: Online Searching; Database; Indexing; Software Review; Online Systems

Identifiers: Kwik Knowledge; Steve McIntosh

THE KI COMPANION **column** reviews Kwik Knowledge database scanning software from Steve McIntosh. Says a click on the Computers and Electronics category brings: up the Business Software **database** ; Microcomputer **Index** ; Computer **Database** ; Ei Compendex Plus; Buyers Guide to Micro Software; Computer News Fulltext; INSPEC; Microcomputer Software Guide; and MathSci  
...

... scope of the database. Remarks that the Business Software database

contains directory and review records with controlled **vocabulary** indexing **terms** and basic product information. Notes that abstracts of journal articles describing and evaluating the product and complete bibliographic citations are included review records. Discusses search strategies in Business Soft **database** and Microcomputer **Index** and results. Contains three screen displays. (KLB)

24/5,K/32 (Item 1 from file: 239)

DIALOG(R)File 239:Mathsci

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02607232 MR 96i#30003

**On the order and type of integral functions defined by Dirichlet series.**

Das, A. K. (Department of Mathematics, University of Kalyani, Kalyani 741 235, West Bengal, India)

Mazumdar, N. C. (Department of Mathematics, University of Kalyani, Kalyani 741 235, West Bengal, India)

Corporate Source Codes: 6-KALY; 6-KALY

J. Anal.

Journal of Analysis, 1995, 3, 253--257. ISSN: 0971-3611

Language: English Summary Language: English

Document Type: Journal

Journal Announcement: 9515

Subfile: MR (Mathematical Reviews) AMS

Abstract Length: MEDIUM (18 lines)

The paper is concerned with a class  $\mathcal{D}(a, \lambda)$  of general entire Dirichlet series  $\mathcal{D}(a, \lambda)$  with complex coefficient sequence  $a = \{a_n; n = 1, 2, \dots\}$  and non-negative real strictly increasing exponent sequence  $\lambda$  satisfying the conditions  $\frac{\ln n}{\lambda_n} \rightarrow 0$ ,  $\frac{\ln n}{\lambda_n} \rightarrow \infty$  as  $n \rightarrow \infty$ .

The authors consider  $\mathcal{D}(a, \mu)$ ,  $\mathcal{D}(b, \nu)$  and  $\mathcal{D}(\frac{a}{b})$  where  $m_1, m_2$  are "constraints" and  $\lambda, \mu, \nu$  are mutually asymptotic, and present relations among their (Ritt) orders, lower orders and types, with a number of other conditions in the case of lower orders.

In view of the existing literature (and under due care for mathematical rigour) the efforts of the paper **reduce** to determining relations among the  $\limsup$ 's and  $\liminf$ 's of two real sequences, their sums and products (the last when **non - negative**). Also, the **results** are essentially known in the case of power series (particularly with  $m_1 = m_2 = 1$ ).

Reviewer: Gopala Krishna, J. (Visakhapatnam)

Review Type: Signed review

Descriptors: \*30B50 -Functions of a complex variable (For analysis on manifolds, see 58-XX)-Series expansions-Dirichlet series and other series expansions, exponential series (See also 11M41, 42-XX)

...view of the existing literature (and under due care for mathematical rigour) the efforts of the paper **reduce** to determining relations among the  $\limsup$ 's and  $\liminf$ 's of two real sequences, their sums and products (the last when **non - negative**). Also, the **results** are essentially known in the case of power series (particularly with  $m_1 = m_2 = 1$ ).

24/5,K/33 (Item 2 from file: 239)

DIALOG(R)File 239:Mathsci

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01190170 MR 32##7568

**On some systems of inequalities and linear equations with non-negative solutions. Applications to linear programming.**

Negrescu, Liviu

Acad. R. P. Romine Fil. Cluj Stud. Cerc. Mat.

1963, 14, 93--102

Language: Romanian Summary Language: Russian, French

Document Type: Journal

Subfile: MR (Mathematical Reviews) AMS

Abstract Length: SHORT (10 lines)

The author first gives two sets of sufficient conditions for all solutions of the system of linear inequalities  $Ax \geq 0$  to be **non - negative**. These **results** follow easily from Theorems 5' and 6 of a paper of Fan [Monatsh. Math. 62 (1958), 219--237; MR 20\#2354]. He then obtains a theorem on the solutions of  $Ax \geq b$ . He finally considers a linear programming problem: to minimize  $f=(c,x)$  over **non - negative solutions** of  $Ux \geq b$ , and shows that in special cases one can **reduce** the number of linear inequalities involved without changing the number of unknowns.

Reviewer: Carlson, David

Descriptors: \*15.50 -LINEAR AND MULTILINEAR ALGEBRA; MATRIX THEORY-Linear inequalities

...of sufficient conditions for all solutions of the system of linear inequalities  $Ax \geq 0$  to be **non - negative**. These **results** follow easily from Theorems 5' and 6 of a paper of Fan [Monatsh. Math. 62 (1958), 219...

...of  $Ax \geq b$ . He finally considers a linear programming problem: to minimize  $f=(c,x)$  over **non - negative solutions** of  $Ux \geq b$ , and shows that in special cases one can **reduce** the number of linear inequalities involved without changing the number of unknowns.

24/5,K/34 (Item 3 from file: 239)

DIALOG(R) File 239:Mathsci

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01168595 MR 29##5839

**Eigenvalues of non-negative matrices.**

Pruitt, William E.

Ann. Math. Statist.

1964, 35, 1797--1800

Language: English

Document Type: Journal

Subfile: MR (Mathematical Reviews) AMS

Abstract Length: MEDIUM (16 lines)

Let  $P=(p_{ij})$ ,  $i,j=0,1,2,\dots$ , be a non-negative infinite matrix which is irreducible in the sense that the transitive closure of the relation  $\{(i,j); p_{ij}>0\}$  contains all pairs  $(i,j)$ , and let  $\lambda$  be a positive number. The author gives a necessary and sufficient condition (too complicated to reproduce here) for the existence of a non-negative, non-zero vector  $x$  satisfying  $Px=\lambda x$ . The method adopted is to use some results of Vere-Jones [Quart. J. Math. Oxford Ser. (2) 13 (1962), 7--28; MR 25\#4571] to **reduce** the problem to the case in which  $\sum p_{ij} \leq 1$  for all  $j$ , and then to apply a theorem of Harris [Proc. Amer. Math. Soc. 8 (1957), 937--942; MR 19, 989] and Veech [Proc. Amer. Math. Soc. 14 (1963), 856--860; MR 27\#6302] to the transpose of  $P$ . A by-product of the argument is a description of the set of **non - negative solutions**  $x$  of the inequality  $Px \leq \lambda x$ .

Reviewer: Kingman, J. F. C.

Descriptors: \*15.60 -LINEAR AND MULTILINEAR ALGEBRA; MATRIX THEORY-Positive matrices ; 15.25 -LINEAR AND MULTILINEAR ALGEBRA; MATRIX THEORY-Eigenvalues and eigenvectors

...of Vere-Jones [Quart. J. Math. Oxford Ser. (2) 13 (1962), 7--28; MR 25\#4571] to **reduce** the problem to the case in which  $\sum p_{ij} \leq 1$  for all  $j$ ...

...the transpose of  $P$ . A by-product of the argument is a description of the set of **non - negative solutions**  $x$  of the inequality  $Px \leq \lambda x$ . ...

24/5,K/35 (Item 4 from file: 239)

DIALOG(R) File 239:Mathsci



01153501 MR 27##3451

**A technique for resolving degeneracy in linear programming.**

Wolfe, Philip

J. Soc. Indust. Appl. Math.

1963, 11, 205--211

Language: English

Document Type: Journal

Subfile: MR (Mathematical Reviews) AMS

Abstract Length: LONG (44 lines)

Geometrically, the simplex method for solving linear programs passes iteratively from one extreme point to a selected neighbor in a convex polyhedral set. If the set is defined by a system of  $m$  linear equations in  $n$  non-negative variables, then algebraically an extreme point solution  $E$  is obtained if, setting  $n-m$  variables equal to zero, there is a unique **non - negative solution** in the remaining ``basic'' set of  $m$  variables. If the same extreme point  $E$  corresponds to more than one basic set, the solution is called ``degenerate''. If so, the value of linear ``objective'' form (to be minimized) may not **decrease** from iteration to iteration. Several special selection rules for successively choosing basic sets have been proposed to guarantee under degeneracy termination in finite number of steps.

According to the author, his paper ``is closely related to the material of Dantzig [IBM J. Res. Develop. 4 (1960), 505--506; MR 23\#B1596]. That paper may be viewed as showing the existence of a class of choice rules which prevent cycling in the simplex method and the present paper viewed as exhibiting a member of that class.'' At any iteration let  $R$  be the set of equations in the simplex tableau whose constant terms are zero and from which the pivot term can be selected. These constant terms are each replaced by the polynomial  $0 + \epsilon$ , where  $\epsilon > 0$ . (In selecting pivots, polynomial expressions in  $\epsilon$  and later  $\epsilon^2, \dots$  are compared using a lexicographic ordering of their leading coefficients.) Degeneracy becomes less ``deep'' if a pivot term occurs outside of  $R$ ; if so, there will be a positive decrease of the objective form. However, degeneracy deepens if a proper subset  $R'$  of the  $R$  equations should develop polynomial expressions in  $\epsilon$  with all zero coefficients. For these equations, the constants are replaced by  $0 + \epsilon + \epsilon^2$  and pivots are now selected from  $R'$ , etc.

The author's proof is essentially inductive (although not exactly so stated). The number of pivots selected in the subset  $R$  will be finite because, by induction, there can be only a finite number of steps in  $R'$  which results in an optimum solution or a non-zero decrease in the  $\epsilon$  term of the objective form. This implies non-repetition in the choice of basic sets of variables.

The paper concludes with some empirical observations on the number of iterations required to solve some simple degenerate problems using, unfortunately, a different pivot selection rule.

Reviewer: Dantzig, G. B.

Descriptors: \*90.50 -ECONOMICS, OPERATIONS RESEARCH, PROGRAMMING, GAMES-Linear programming

...point solution  $E$  is obtained if, setting  $n-m$  variables equal to zero, there is a unique **non - negative solution** in the remaining ``basic'' set of  $m$  variables. If the same extreme point  $E$  corresponds to more...

...solution is called ``degenerate''. If so, the value of linear ``objective'' form (to be minimized) may not **decrease** from iteration to iteration. Several special selection rules for successively choosing basic sets have been proposed to...

24/5,K/36 (Item 5 from file: 239)

DIALOG(R) File 239:Mathsci

## On boundaries and lateral conditions for the Kolmogorov differential equations.

Feller, William

Ann. of Math. (2)

1957, 65, 527--570.

Language: English

Document Type: Journal

Subfile: MR (Mathematical Reviews) AMS

Abstract Length: LONG (70 lines)

This paper contains a general analytical method of constructing stationary transition probability functions  $p_{ij}(t)$ , for Markov processes with countable state space  $E = \{0, 1, 2, \dots\}$  and continuous parameter  $t \geq 0$ , with given finite transition rates  $q_{ij} = p_{ij}(t) - p_{ij}(0)$  such that  $\sum_j q_{ij} = 0$ . In terms of the Laplace transforms  $P(\lambda)_{ij} = \int_0^\infty e^{-\lambda t} p_{ij}(t) dt$  this amounts to constructing non-negative matrices  $P(\lambda)$  with row sums  $\leq 1$ ,  $(I - Q)P(\lambda) = I$  (Laplace transform version of the Kolmogorov backward equations) and  $P(\lambda) = \lim_{\mu \rightarrow \lambda} (P(\mu) - \mu P(\lambda))$  (resolvent equation). The resolvent equation is equivalent to the requirement that  $P(\lambda)$ , operating on bounded column vectors, should have its range independent of  $\lambda$ ; thus the author can reduce the problem of constructing  $P(\lambda)$  to the search for lateral conditions which will describe the range of  $P(\lambda)$  (as a subset of the domain of  $Q$ ). The author first gives a new existence proof for his minimal solution of the Kolmogorov equations [Trans. Amer. Math. Soc. 48 (1940), 488--515; MR 2, 101]. For the corresponding matrix  $P(\lambda)$ , put  $\overline{x}(\lambda) = 1 - \sum_j P(\lambda)_{ij}$ . Then  $\overline{x}(\lambda)$  is the maximal element of  $\{x : 0 \leq x \leq 1, x = Qx\}$ , so that  $P(\lambda)$  has row sums 1 if and only if  $\overline{x}(\lambda) = 0$ , and then the backward equations have a unique solution. When  $\overline{x}(\lambda)$  is non-trivial its structure is studied by writing  $x = Qx$  in the form  $x = \Pi(\lambda)x$ , the sub-stochastic matrix  $\Pi(\lambda)$  being defined by  $\Pi(\lambda)_{ij} = (1 - \delta_{ij})q_{ij} / (\lambda + \sum_k q_{ik})$ , and applying the author's theory of boundaries induced by non-negative matrices [see the paper reviewed above]. It turns out that the "exit boundary"  $B$  and the topology for  $E \cup B$ , induced by  $\Pi(\lambda)$ , are independent of  $\lambda$ , and that vectors  $v$  in the range of  $P(\lambda)$  are characterised by the lateral condition:  $v(i) \rightarrow 0$  as  $i \rightarrow B$ . For other solutions  $P(\lambda)$ , each column of  $P(\lambda) - P(\lambda_{\min})$  must belong to  $\text{range } P(\lambda)$ ; the simplest solutions are obtained by making each column a multiple of  $\overline{x}(\lambda)$ , so that  $P(\lambda)_{ij} = P(\lambda_{\min})_{ij} + \overline{x}(\lambda) y_j$ ,  $y$  being chosen so as to make the range of  $P(\lambda)$  independent of  $\lambda$ . Two possible choices of  $y$  are treated, (i)  $y$  proportional to  $\alpha P(\lambda_{\min})$ , where  $\alpha \geq 0$  is such that  $\sum_i \alpha (1 - \overline{x}(\lambda)_{ii}) < \infty$  and (ii)  $y$  a solution of  $\lambda y = yQ$ ; the lateral condition in each case has the form  $\lim_{i \rightarrow B} (v(i) + f(v)) = 0$  where  $m \geq 0$  and  $f$  is an unbounded linear functional which resembles a derivative at the boundary. In case (ii), the forward equations  $P(\lambda)(\lambda I - Q) = I$  hold; in case (i), they do not. These two constructions can be generalized by adjoining another state  $\omega$  to  $E$ , and for the resulting processes on the enlarged state space,  $\omega$  can be an instantaneous state  $q_\omega = -\infty$ . Finally, it is shown how to construct  $P(\lambda)$  satisfying both Kolmogorov equations, particularly when the exit boundary contains only finitely many points. Here  $P(\lambda)$  can also be described by specifying its range when operating on row vectors  $w$  such that  $\sum_j w(j) < \infty$ ; the corresponding lateral conditions involve the "entrance boundary" induced by non-negative solutions of  $\lambda y = yQ$ . [Reviewer's remark: The paper contains some

computational errors and a few obscurities. These have not been detailed here because the author has informed the reviewer that a forthcoming note in Ann. Math. will contain the necessary corrections and explanations.\\}

Reviewer: Reuter, G. E. H.

Review Type: Signed review

Descriptors: \*60.0X -Probability

...lambda\$, operating on bounded column vectors, should have its range independent of \$\\lambda\$; thus the author can **reduce** the problem of constructing \$P\\sb \\lambda\$ to the search for lateral conditions which will describe the...

...that \$\\sum\\vert w(j)\\vert <\\infty\$; the corresponding lateral conditions involve the 'entrance boundary' induced by **non - negative solutions** of \$\\lambda y=yQ\$. \\{Reviewer's remark: The paper contains some computational errors and a few obscurities...

**24/5,K/37 (Item 1 from file: 275)**

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01522280 SUPPLIER NUMBER: 12335096 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**MacUser minifinders: 1001 Macintosh products. (Buyers Guide)**

MacUser, v8, n8, p87(52)

August, 1992

DOCUMENT TYPE: Buyers Guide ISSN: 0884-0997 LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 77991 LINE COUNT: 06173

ABSTRACT: A directory of 1001 hardware and software products for the Apple Macintosh microcomputer is presented. Each product has been reviewed by MacUser and each one's overall rating is given. Basic features are also provided as well as each product's price and the manufacturer's address. Products that are award winners are indicated with a \*.

DESCRIPTORS: Directories; Hardware; Software; Microcomputer

SIC CODES: 3571 Electronic computers; 7372 Prepackaged software

TRADE NAMES: Apple Macintosh (680X0-based system)--Equipment and supplies

OPERATING PLATFORM: Apple Macintosh

FILE SEGMENT: CD File 275

... integrity, and functionality. The easy-to-use module sets up detailed account information, including bank data, payment **terms**, and expense items for disbursements. Version 1.0 reviewed. Requires 68030 CPU or higher with 2 MB...91) H '89 Eddy [MF#1101]

GCC Technologies WriteImpact

The WriteImpact is a near-letter-quality dot- **matrix** printer. The driver features include 25-to-400-percent enlargement and reduction, smoothing, print preview, and kerning...Macs and PCs, even while being used as a copier. Good performance with text files and simple **graphics** but bogs down severely with complex PostScript images. Comes with two letter-sized, 250-sheet paper trays...

...is good. A SCSI port is included for use with third-party hard drives. \$6,990. Oc **Graphics** USA, Inc., P.O. Box 7169, Mountain View, CA 94039. 800-545-5445 or 415-964-7900...92807. 714-779-2772. (Nov '88) H '87 Eddy [MF#1123]

Orange Micro Grappler IIsp

This dot- **matrix** -printer interface cartridge emulates the ImageWriter LQ for maximum compatibility. Includes networking and spooling software. Supports inkjet...

...Slow for printing plain text, but has superior speed for processor-intensive applications such as printing complex **graphics**. \$1,995. QMS, Inc., One Magnum Pass, Mobile, AL 36618. 800-523-2696 or 205-633-4300...368-3800. (June '91) [MF#1156]

24/5,K/43 (Item 1 from file: 674)  
DIALOG(R)File 674:Computer News Fulltext  
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067823

**Supersites to the rescue**

**Nested intranet, extranet and internet sites save time, space and energy for corporations juggling multiple web application projects.**

Byline: PEGGY WATT

Journal: Network World Page Number: S14

Publication Date: July 27, 1998

Word Count: 1376 Line Count: 134

**Text:**

... Burbank, Calif. From [www.warnerchappell.com](http://www.warnerchappell.com), Web-surfing music lovers can mine Warner-Chappell resources by entering **key words** to find a particular song. The Web server sends the query to an Oracle Corp. database running...

...multimedia data as sound and video clips and the basic records that used to be printed in a **catalog**. The **database** also contains promotional materials and press clippings and soon will integrate with the database Warner-Chappell keeps...

... Access Protocol to manage the entire user list and has implemented a common data model for all **tables** and other information presented on Web pages. "Although security is an issue and will always be an...

Set	Items	Description
S1	1590	(VOCABULARY OR VERBAL OR LEXIS OR WORDS OR PHRASEOLOGY OR - THESAURUS OR LEXICON OR DICTIONARY OR GLOSSARY OR WORDBOOK OR TERMINOLOGY) (2N) (TERM OR TERMS OR DESCRIPTOR? OR SUBJECT() HEA- DING OR KEYWORD? OR KEY() (WORD? OR VALUE?))
S2	1262060	MATRIX? OR MATRICES OR TUPLE OR TABLE? OR ARRAY? OR (MATHE- MATICAL OR DATA) () ELEMENT? OR COLUMN? OR ROW? OR GRAPH? OR FAT OR MFAT OR NTFS OR VFAT
S3	4879	(INDEX? OR INDICES OR CATALOG? OR MAP OR MAPS OR MAPPING OR LIST? OR ORGANIZE?) (3N) (DATABASE? OR DATABANK? OR DATA() (BAS- E? OR BANK?) OR DB)
S4	1571207	FACTOR?() OUT OR REMOVE OR DELETE OR SUBTRACT? OR DECREMENT OR EVICTING OR DEDUCT OR REMOVE OR TAKE() AWAY OR REDUCE OR DE- CREASE
S5	11	((NON OR "NOT") () NEGATIVE) (2N) (RESULT? OR SOLUTION? OR ANS- WER? OR CONCLUSION?)
S6	5189	(POSITIVE OR QUANTITY() GREATER() THAN() ZERO) (2N) (RESULT? OR SOLUTION? OR ANSWER? OR CONCLUSION?) OR SOME() RESULT?
S7	0	S1 AND S2 AND S3 AND S4 AND S5
S8	0	S3 AND S5
S9	0	S3 AND S6
S10	406	S2 AND S6
S11	0	S10 AND S3
S12	1	S1 AND S2 AND S3
S13	1	S2 AND S5
S14	4	S4 AND S5
S15	11	S5 OR S13 OR S14
S16	0	S10 AND S1
S17	54	S10 AND S4
S18	0	S17 AND S3
S19	54	S17 NOT S15
S20	12	S19 AND IC=G06F?

File 347:JAPIO Oct 1976-2003/Jun(Updated 031006)

(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200372

(c) 2003 Thomson Derwent

15/5/2 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

06144188 \*\*Image available\*\*  
MINIMAL/MINIMUM VALUE SEARCHING METHOD

PUB. NO.: 11-085728 [JP 11085728 A]  
PUBLISHED: March 30, 1999 (19990330)  
INVENTOR(s): MAKIMOTO NOBUO  
TAGUCHI JUNICHI  
NOMOTO YASUE  
APPLICANT(s): HITACHI LTD  
APPL. NO.: 09-245070 [JP 97245070]  
FILED: September 10, 1997 (19970910)  
INTL CLASS: G06F-017/11

#### ABSTRACT

PROBLEM TO BE SOLVED: To search only the minimal point of a function without waste by replacing the Hessian of a conventional Newton method with its absolute value.

SOLUTION: A positive potential function 520p to rapidly take a large value near a set L of discovered zero points is multiplied a non-negative value function 510e desired to search the zero point. A **resulting non-negative** value function 530  $g=g(\theta; L)$  does not have the solution of gradient  $(g)=0$  near L. When there is any value not included in the zero point of (e), on the other hand, it is the zero point of (g) and the solution of  $g=0$ . Therefore, by successively searching the solution of  $g=0$ , the plural different zero points of (e) can be searched. Concerning the Newton method for finding the zero point of gradient (f) in order to search a minimal (minimum) point 550 of a minimal point search object function 530, the Hessian  $H_f$  is replaced with its absolute value  $H_f$  (as a symmetric **matrix**) so that only the minimal point (&ne; saddle point and maximal point) can be efficiently searched.

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15/5/3 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04780417 \*\*Image available\*\*  
DIVIDER

PUB. NO.: 07-073017 [JP 7073017 A]  
PUBLISHED: March 17, 1995 (19950317)  
INVENTOR(s): SATO FUMIKI  
FUJITA KOICHI  
APPLICANT(s): MITSUBISHI ELECTRIC CORP [000601] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 05-217385 [JP 93217385]  
FILED: September 01, 1993 (19930901)  
INTL CLASS: [6] G06F-007/49  
JAPIO CLASS: 45.1 (INFORMATION PROCESSING -- Arithmetic Sequence Units)  
JAPIO KEYWORD: R131 (INFORMATION PROCESSING -- Microcomputers & Microprocessors)

#### ABSTRACT

PURPOSE: To perform division at a higher speed than a normal recovery type divider and to eliminate the need of correction of the quotient and the remainder like the normal recovery type divider by providing an adder, a deciding means, a first gate means, a second gate means, and a shift means.

CONSTITUTION: A deciding circuit 7 decides the sign of the addition result of an adder 6. If the sign of the dividend is positive, a gate 9 is made

conductive to send the addition result of the adder to a shifter 10 when the addition result is not negative (CYout=1), but a gate 8 is made conductive to send contents of a latch 4 to the shifter 10 when the addition result is negative. If the sign of the dividend is negative, the gate 9 is made conductive to send the addition result to the shifter 10 when the addition result of the adder 6 is not positive (CYout=0), but the gate 8 is made conductive to send contents of the latch 4 to the shifter 10 when the addition result is positive. The circuit 7 is used as a carry look ahead circuit for a **subtractor** as the whole.

15/5/4 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

03054357 \*\*Image available\*\*  
SUFFICIENCY POSSIBILITY DECIDING DEVICE

PUB. NO.: 02-029857 [JP 2029857 A]  
PUBLISHED: January 31, 1990 (19900131)  
INVENTOR(s): YAMAZAKI ISAMU  
APPLICANT(s): TOSHIBA CORP [000307] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 63-179210 [JP 88179210]  
FILED: July 20, 1988 (19880720)  
INTL CLASS: [5] G06F-015/31; G06F-009/44; G06F-015/20; G06F-015/40  
JAPIO CLASS: 45.4 (INFORMATION PROCESSING -- Computer Applications); 45.1  
(INFORMATION PROCESSING -- Arithmetic Sequence Units)  
JOURNAL: Section: P, Section No. 1035, Vol. 14, No. 183, Pg. 50, April  
12, 1990 (19900412)

#### ABSTRACT

PURPOSE: To decide both sufficiency possibility and sufficiently impossibility within almost the same processing time by deciding the sufficiency possibility in accordance with the existence of a **non - negative answer** in a primary equation or not.

CONSTITUTION: A conversion means 10 converts a proposition group or a section set  $\{c(\text{sub } i)\}$  to be decided at its sufficiently possibility into the original specific expression A or an addition group D having a dyadic operation method corresponding to inference and stores the converted result  $\{a(\text{sub } i)\}$  in a storage means 20. A possibility deciding means 30 decides whether a **non - negative answer**  $(\alpha(\text{sub } i) \geq 0)$  exists in a primary equation  $\sigma.F = (\text{sub } 1)a(\text{sub } i) \dots \alpha(\text{sub } i) = a(\text{sub } 0)$  or not by using the  $\{a(\text{sub } i)\}$  as a coefficient and the origin  $\{\alpha(\text{sub } i)\}$  of a coefficient ring R of the addition group D as an unknown number. When the means 30 decides the existence of the **non - negative answer**, the original section set is decided as sufficiently impossibility. Consequently, sufficiency possibility or sufficiency impossibility can be decided within almost the fixed time independently of the property of the applied section set.

15/5/7 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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008971394 \*\*Image available\*\*  
WPI Acc No: 1992-098663/199213  
XRPX Acc No: N92-073869

**Processor element for calculating absolute difference - has arithmetic unit subtracting output data of input unit or adding up data if first result is non - negative**

Patent Assignee: OKI ELECTRIC IND CO LTD (OKID )  
Inventor: MASAKI H; MATSUBISHI N; TO ; TOKUNO Y; YAMAZAKI M  
Number of Countries: 006 Number of Patents: 006  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 477011	A	19920325	EP 91308550	A	19910919	199213 B
US 5235536	A	19930810	US 91762348	A	19910919	199333
EP 477011	A3	19930519	EP 91308550	A	19910919	199403
EP 477011	B1	19980708	EP 91308550	A	19910919	199831
DE 69129723	E	19980813	DE 629723	A	19910919	199838
			EP 91308550	A	19910919	
JP 3228927	B2	20011112	JP 90250733	A	19900920	200174

Priority Applications (No Type Date): JP 90250733 A 19900920

Cited Patents: No-SR.Pub; 2.Jnl.Ref; DE 1524163; GB 2247330; JP 58132861

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 477011	A		24		
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Designated States (Regional): DE FR GB NL

US 5235536	A		20	G06F-007/52	
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EP 477011	B1	E		G06F-007/544	
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Designated States (Regional): DE FR GB NL

DE 69129723	E			G06F-007/544	Based on patent EP 477011
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JP 3228927	B2		21	G06F-007/50	Previous Publ. patent JP 4128982
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Abstract (Basic): EP 477011 A

A processor element includes an input unit (130) for receiving the input and result data and outputs input and result data in the two stages respectively. A second input unit (140) receives the second input data and outputs the second input and result data in the two stages respectively.

An arithmetic unit (150) **subtracts** the output data of the input unit from that of the second input unit in the first stage to produce the first result data, and produces the second result data in the same way in the second stage if the first result data is negative, otherwise adding up the output data of the two input units in the second stage.

USE/ADVANTAGE - Single processor element can compute absolute difference and cumulative absolute difference. Useful in digital signal processing.

Dwg.1/12

Title Terms: PROCESSOR; ELEMENT; CALCULATE; ABSOLUTE; DIFFER; ARITHMETIC;

UNIT; **SUBTRACT**; OUTPUT; DATA; INPUT; UNIT; ADD; UP; DATA; FIRST; RESULT; NON; NEGATIVE

Index Terms/Additional Words: DIGITAL; SIGNAL; PROCESSING

Derwent Class: R27; T01

International Patent Class (Main): G06F-007/50; G06F-007/52; G06F-007/544

International Patent Class (Additional): G06F-007/48; G06F-015/34

File Segment: EPI

15/5/8 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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008137243 \*\*Image available\*\*

WPI Acc No: 1990-024244/199004

XRPX Acc No: N90-018550

**Automated theorem proving method for information processing - automatically judging provability of statement on basis of given set of knowledge**

Patent Assignee: TOSHIBA KK (TOKE )

Inventor: YAMAZAKI I

Number of Countries: 004 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 351842	A	19900124	EP 89113337	A	19890720	199004 B
EP 351842	A3	19920708	EP 89113337	A	19890720	199334
EP 351842	B1	19960911	EP 89113337	A	19890720	199641
DE 68927143	E	19961017	DE 627143	A	19890720	199647
			EP 89113337	A	19890720	
US 5596682	A	19970121	US 89381078	A	19890718	199710



US 91756224 A 19910905  
US 94183798 A 19940121

Priority Applications (No Type Date): JP 88179210 A 19880720  
Cited Patents: No-SR.Pub; 3.Jnl.Ref  
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 351842	A	E	59		
EP 351842	B1	E	65	G06F-009/44	
Designated States (Regional): DE FR GB					
DE 68927143	E			G06F-009/44	Based on patent EP 351842
US 5596682	A		49	G06F-015/18	CIP of application US 89381078 Cont of application US 91756224

Abstract (Basic): EP 351842 A

An automated theorem proving method for information processing involves transforming the statement and the set of knowledge into expressions in terms of elements of a module. A linear equation is constructed with the elements of the module as coefficients and elements of a ring of scalars of the module as unknowns.

The existence of **non - negative solution** to the linear equation is checked, and it is determined that the statement is provable when the **non - negative solution** exist, and not provable otherwise. The elements of the module are ordered pairs of an integer and a collection of literals.

ADVANTAGE - Highly efficient, high-speed parallel processing.

1/32

Title Terms: AUTOMATIC; THEOREM; PROVE; METHOD; INFORMATION; PROCESS;  
AUTOMATIC; JUDGEMENT; STATEMENT; BASIS; SET

Index Terms/Additional Words: ARTIFICIAL; INTELLIGENCE

Derwent Class: T01

International Patent Class (Main): G06F-009/44; G06F-015/18

International Patent Class (Additional): G06F-009/44

File Segment: EPI

15/5/11 (Item 6 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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001475169

WPI Acc No: 1976-D8076X/197617

**Quotient forming for speed values in slip measurement - using standard electronic components bt achieving high accuracy and speed**

Patent Assignee: DR HORN E GMBH (HORN-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2447633	A	19760415				197617 B

Priority Applications (No Type Date): DE 2447633 A 19741005

Abstract (Basic): DE 2447633 A

The dividend and divisor are in the form of voltages analogue with a physical variable. Part of the divisor is **subtracted** from the dividend and if the **result** is **not negative** a reference voltage is stored in a summing device. A reduced part of the divisor is then **subtracted** from the result and if the next **result** is **not negative** a part of the reference voltage reduced in the same ratio is fed into the summing device, and so on. If the result is negative no voltage is fed into the summing device and a further reduced part of the divisor is **subtracted** from the dividend and this step is repeated until an output voltage proportional to the quotient is produced at the summing device output.

Title Terms: QUOTIENT; FORMING; SPEED; VALUE; SLIP; MEASURE; STANDARD;  
ELECTRONIC; COMPONENT; ACHIEVE; HIGH; ACCURACY; SPEED  
Derwent Class: T02

International Patent Class (Additional): G06G-007/16  
File Segment: EPI

003867144

WPI Acc No: 1984-012672/198403

XRPX Acc No: N84-009425

**Accessing circuit for variable-width graphics data bus - aligns first bit with given bit position of bus and determines whether number of bits exceeds bus width**

Patent Assignee: IBM CORP (IBM C )

Inventor: DILL F H; LING D T; MATICK R E; MCBRIDE D J

Number of Countries: 004 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 97834	A	19840111	EP 83105439	A	19830601	198403 B
US 4667305	A	19870519	US 82394044	A	19820630	198722
EP 97834	B	19890913				198937
DE 3380572	G	19891019				198943

Priority Applications (No Type Date): US 82394044 A 19820630

Cited Patents: A3...8708; EP 32136; No-SR.Pub; US 4236228; US 4346377; US 4435792

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 97834	A	E	35		
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Designated States (Regional): DE FR GB

EP 97834	B	E			
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Designated States (Regional): DE FR GB

Abstract (Basic): EP 97834 A

A modulo  $N_c$  combinatorial ring shifter is used to deal with any modulo (i.e. any number of chips) from the smallest value of the number of bits in the variable-width field,  $N_f$ , up to the maximum data width of  $N_m$ , equal to eight. The shifter aligns the first of the  $N_f$  bits with the selected bit position,  $n$ , on the bus. An overflow signal generator or bit-address incrementer detects first if a wrap or overflow condition obtains. If so, then all the wrapped bits have their bit addresses incremented by one.

A decoder circuit performs a **subtraction**  $N_c - (n + N_f)$  where  $N_c$  is the last bit position of the bus and  $n$  is the first selected bit position. If the **result**,  $AI$ , is **positive**, then no wrapping is required. If  $AI$  is negative then wrapping is required and the binary value of  $AI$  specified the number of chips which must be incremented. A select signal generator which has two decoders indicates the valid data bit positions of the data bus.

0/1

Title Terms: ACCESS; CIRCUIT; VARIABLE; WIDTH; **GRAPHIC** ; DATA; BUS; ALIGN; FIRST; BIT; BIT; POSITION; BUS; DETERMINE; NUMBER; BIT; BUS; WIDTH

Derwent Class: T01; T04

International Patent Class (Additional): G06F-005/00 ; G06F-013/00

File Segment: EPI

20/5/11 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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003050136

WPI Acc No: 1981-F0168D/198122

**Sine-cosine functions digital calculator - has calculator argument unitary code input connected to argument counter and switch input, having other inputs fed by adders**

Patent Assignee: GOROKHOV V I (GRO-I)

Inventor: ILIN A A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
SU 758171	B	19800825				198122 B

Priority Applications (No Type Date): SU 2585523 A 19780302

Abstract (Basic): SU 758171 B

The calculator may be used in **graphical** data imaging systems and in digital radial-circular sweep equipment for simultaneous sine and cosine function calculation from an argument presented as a unitary code. The device enables a wide use of the calculated function amplitudes by use of a zero decoder and switch.

The process of shaping the numerical values of the sine and cosine functions starts on arrival of a unitary code signal. An adder becomes a storage-type adder and receives the output of the argument counter. The argument counter content is increased by 1 for each unitary code pulse.

If the **result** is **positive** after each action or the result is negative the adders operate to produce numerical equivalents. The device operates so that the unitary code rail is connected to the input of a switch so that data pulses pass to 2 counters in the order; the sine counter receiving each unitary code pulse, the cosine counter receiving that unitary code pulse which appears when the adder receives a negative result. The algorithm continues until the 1st adder receives a negative result when the argument counter becomes a pulse **subtraction** device and the switch connects each unitary code pulse to the cosine counter. Unitary code pulses fed to the calculator corresp. to change in the function argument time and the counters have a periodic function. Bul.31/23.8.80.

Title Terms: SINE; COSINE; FUNCTION; DIGITAL; CALCULATE; CALCULATE;

ARGUMENT; UNIT; CODE; INPUT; CONNECT; ARGUMENT; COUNTER; SWITCH; INPUT;

INPUT; FEED; ADDER

Derwent Class: T01

International Patent Class (Additional): G06F-015/31

File Segment: EPI

20/5/12 (Item 8 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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001671101

WPI Acc No: 1977-A7566Y/197704

**Alphanumerical lamp register display - has greater capacity and design simplification with indicator selectors and extra AND-gates**

Patent Assignee: RYAZAN WIRELESS ENG INST (RYWI )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
SU 511584	A	19760517				197704 B

Priority Applications (No Type Date): SU 1785256 A 19720518

Abstract (Basic): SU 511584 A

Lamp register display is for synthesis of numerals. Cyrillic and Latin alphabets and service symbol is response to data input in code sequence form. In order to simplify the display, indicator-selector units (GBN) and additional AND gates (R2D2) are introduced into the prototype contg.  $K=M+N$  alpha-numerical indicators (GUN) each consisting of  $n$  groups of cold-cathode thyatrons (TT) and corresponding control circuits comprising diode-resistive (R1D1) AND circuits (N) and erasing unit (GC).

The circuitry also includes the **matrix** (M) with  $n$  outputs, address circuit (GA) with as many address rails as display lines  $N$  and **columns**  $M$ . data input unit (GB) and capacitor (C). As a result, the load on the **matrix** is considerably reduced and the number of alpha-numerical indicators can be increased correspondingly. Also, the number of conductors connecting the address unit to the indicators is reduced by a factor of  $(M \times N) / (M + N)$ .

When a symbol is to be synthesised in the indicator in line  $N$  and **column**  $M$ , a positive potential is applied from the address unit to the corresponding rails. The thyatron of the indicator-selector is fired

on simultaneous arrival of signals at R1 and R2 of the diode-resistive AND circuit. The **resulting positive** potential of the cathode is fed across the capacitor to the input of the thyatron of the erasing unit to **remove** previous data. Since potential is only applied to the resistors of the diode-resistive AND circuits of the selected indicator, the coded symbol is only displayed in this indicator.

Title Terms: ALPHANUMERIC; LAMP; REGISTER; DISPLAY; GREATER; CAPACITY; DESIGN; SIMPLIFY; INDICATE; SELECT; EXTRA; GATE

Derwent Class: T01; T04

International Patent Class (Additional): G06F-003/14

File Segment: EPI

Set	Items	Description
S1	4698	(VOCABULARY OR VERBAL OR LEXIS OR WORDS OR PHRASEOLOGY OR - THESAURUS OR LEXICON OR DICTIONARY OR GLOSSARY OR WORDBOOK OR TERMINOLOGY) (2N) (TERM OR TERMS OR DESCRIPTOR? OR SUBJECT() HEA- DING OR KEYWORD? OR KEY() (WORD? OR VALUE?))
S2	850789	MATRIX? OR MATRICES OR TUPLE OR TABLE? OR ARRAY? OR (MATHE- MATICAL OR DATA) () ELEMENT? OR COLUMN? OR ROW? OR GRAPH? OR FAT OR MFAT OR NTFS OR VFAT
S3	10447	(INDEX? OR INDICES OR CATALOG? OR MAP OR MAPS OR MAPPING OR LIST? OR ORGANIZE?) (3N) (DATABASE? OR DATABANK? OR DATA() (BAS- E? OR BANK?) OR DB)
S4	700101	FACTOR? () OUT OR REMOVE OR DELETE OR SUBTRACT? OR DECREMENT OR EVICTING OR DEDUCT OR REMOVE OR TAKE() AWAY OR REDUCE OR DE- CREASE
S5	84	((NON OR "NOT") () NEGATIVE) (2N) (RESULT? OR SOLUTION? OR ANS- WER? OR CONCLUSION?)
S6	18107	(POSITIVE OR QUANTITY() GREATER() THAN() ZERO) (2N) (RESULT? OR SOLUTION? OR ANSWER? OR CONCLUSION?) OR SOME() RESULT?
S7	0	S1 (S) S2 (S) S3 (S) S4 (S) S5
S8	4	S1 (S) S2 (S) S3 (S) S4 (S) S6
S9	1	S3 (S) S5
S10	57	S3 (S) S6
S11	43	S10 (S) S2
S12	0	S11 (S) S5
S13	30	S1 (S) S2 (S) S3
S14	0	S13 (S) S5
S15	18	S2 (S) S5
S16	0	S15 (S) S1
S17	25	S4 (S) S5
S18	9	S17 (S) S2
S19	0	S17 (S) S1
S20	1	S17 (S) S3
S21	5	S13 (S) S6
S22	16	S8 OR S9 OR S18 OR S18 OR S20 OR S21

File 348:EUROPEAN PATENTS 1978-2003/Nov W01

(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20031106,UT=20031030

(c) 2003 WIPO/Univentio

22/5,K/7 (Item 3 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00852910 \*\*Image available\*\*

**METHOD OF DISCOVERING PATTERNS IN SYMBOL SEQUENCES**

**PROCEDE PERMETTANT DE DECOUVRIR DES MOTIFS DANS DES SEQUENCES DE SYMBOLES**

Patent Applicant/Assignee:

E I DU PONT DE NEMOURS AND COMPANY, 1007 Market Street, Wilmington, DE  
19898, US, US (Residence), US (Nationality)

Inventor(s):

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MOSER Allan Robert, 815 Westdale Avenue, Swarthmore, PA 19081, US,  
ROGERS Wade Thomas, 607 Springline Drive, West Chester, PA 19382, US,  
UNDERWOOD Dennis John, 304 South 10th Street, Apartment A, Philadelphia,  
PA 19107, US,

Legal Representative:

MEDWICK George M (agent), E.I. du Pont de Nemours and Company, Legal  
Patent Records Center, 1007 Market Street, Wilmington, DE 19898, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200186577 A2-A3 20011115 (WO 0186577)

Application: WO 2001US15005 20010509 (PCT/WO US0115005)

Priority Application: US 2000203440 20000510

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DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ

LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG

SI SK SL TJ TM TR TT UA UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: G06F-019/00

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Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 17180

**English Abstract**

A method of discovering one or more patterns in two sequences of symbols S<sub>1</sub> and S<sub>2</sub> includes the formation, for each sequence, of a master offset table that groups for each symbol the position in the sequence occupied by each occurrence of that symbol. The difference in position between each occurrence of a symbol in one of the sequences and each occurrence of that same symbol in the other sequence is determined and a Pattern Map is formed. For each given value of a difference in position the Pattern Map lists the position in the first sequence of each symbol therein that appears in the second sequence at that difference in position. The collection of the symbols tabulated for each value of difference in position thereby defines a parent pattern in the first sequence that is repeated in the second sequence. A computer readable medium having instructions for controlling a computer system to perform the method and a computer readable medium containing a data structure used in the practice of the method are also disclosed.

**French Abstract**

L'invention concerne un procede permettant de decouvrir un ou plusieurs motifs dans deux sequences de symboles S<sub>1</sub> et S<sub>2</sub>, qui comprend la formation, pour chaque sequence, d'une table de decalage maitresse qui groupe pour chaque symbole la position occupee dans la sequence par chaque occurrence de ce symbole. La difference de position entre chaque occurrence d'un symbole dans une des sequences et chaque occurrence de ce meme symbole dans l'autre sequence sont determinees, et une Table de

correspondance de Motifs est formee. Pour chaque valeur donnee d'une difference de position, la Table de correspondance de Motifs liste la position dans la premiere sequence de chaque symbole de celle-ci qui apparait dans la deuxieme sequence a cette difference de position. Le recueil des symboles constitue en table pour chaque valeur de difference de position definit ainsi un motif parent dans la premiere sequence, lequel motif est repete dans la deuxieme sequence. L'invention concerne egalement un support lisible par ordinateur possedant des instructions permettant de commander un systeme informatique afin de realiser ce procede, ainsi qu'un support lisible par ordinateur contenant une structure de donnees utilisee dans la mise en pratique de ce procede.

Legal Status (Type, Date, Text)

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Republication 20021227 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Fulltext Availability:  
Detailed Description

Detailed Description

... situation where sequence S2 follows the sequence SI.

This offset is preferred because (inverted exclamation mark)t results in non negative indices in the Pattern Map. Then, for each element of each MOT table column, the index in MOT, is subtracted from the offset index of MOT2. The result ((inverted exclamation mark).e., the difference in position) is the row index of the Pattern Map, and, the value stored in that row is the index from MOT, (again by convention) Figure 2 shows the Pattern Map for sequences SI, S2 corresponding to the MOT tables of Figure 1.

Alternatively, a signed difference between the position index of a symbol in a first...

22/5,K/9 (Item 5 from file: 349)  
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00806383

**COLLABORATIVE CAPACITY PLANNING AND REVERSE INVENTORY MANAGEMENT DURING DEMAND AND SUPPLY PLANNING IN A NETWORK-BASED SUPPLY CHAIN ENVIRONMENT AND METHOD THEREOF**

**PLANIFICATION EN COLLABORATION DES CAPACITES ET GESTION ANTICIPEE DES STOCKS LORS DE LA PLANIFICATION DE L'OFFRE ET DE LA DEMANDE DANS UN ENVIRONNEMENT DE CHAINE D'APPROVISIONNEMENT FONDEE SUR LE RESEAU ET PROCEDE ASSOCIE**

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Legal Representative:

HICKMAN Paul L (agent), Oppenheimer Wolff & Donnelly, LLP, 1400 Page Mill Road, Palo Alto, CA 94304, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200139029 A2 20010531 (WO 0139029)



Claim

... have small, or disastrous and even worldaffecting results - the Y2K problem, for example, is a problem that **results** from 1 5 violation of the Unlimited Principle. At minimum, violations of the Unlimited Principle cause the...type of database record termed a 'Concept Condition Record'that is recorded in the same or another **database** that is similarly **organized** to the one containing the words 'Jack' and 'Jill'. The Concept Condition Rule for [invite] is expressed...Space in a Computer  
The only way a computer can really record the data in the Space **data** Category is in  
**terms** of:  
. Coordinates. Coordinates can be used to record spaces and shapes  
- Names of spaces - f o r...to-Any machine contains a method for storing each type of Data Component together with all other **data** Components of the same type, so that a given type of **data** Component is only stored in one place.  
The methods of the Any-to-Any machine provide for...

22/5,K/11 (Item 7 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00784131

**A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A MULTI-OBJECT FETCH COMPONENT IN AN INFORMATION SERVICES PATTERNS ENVIRONMENT  
SYSTEME, PROCEDE ET ARTICLE MANUFACTURE POUR COMPOSANT DE RECUPERATION MULTI-OBJET DANS UN ENVIRONNEMENT CARACTERISE PAR DES SERVICES D'INFORMATIONS**

Patent Applicant/Assignee:

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(Residence), US (Nationality)

Inventor(s):

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Legal Representative:

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2029 Century Park East, Los Angeles, CA 90067, US,

Patent and Priority Information (Country, Number, Date):

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EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU  
LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT  
TZ UA UG UZ VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

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Publication Language: English

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Fulltext Availability:

Detailed Description  
Claims

Fulltext Word Count: 150940

English Abstract

A system, method, and article of manufacture are provided for retrieving multiple business objects across a network in one access operation. A business object and a plurality of remaining objects are provided on a persistent store. Upon receiving a request for the business object, it is established which of the remaining objects are related to the business

object. The related objects and the business object are retrieved from the persistent store in one operation and it is determined how the retrieved related objects relate to the business object and each other. A graph of relationships of the business and related objects is instantiated in memory.

#### French Abstract

La presente invention concerne un systeme, un procede et un article manufacture destine a la recuperation de plusieurs objets d'affaires dans un reseau en une operation d'accès. A cet effet, on dispose dans une memoire permanente d'un objet d'affaire et d'une pluralite d'objets restants. Des la reception d'une requete se rapportant a un objet d'affaires, on recherche deux des objets restants qui sont en relations avec l'objet d'affaires. Une seule operation permet ainsi de recuperer dans la memoire permanente ces objets ainsi que l'objet d'affaires. Il ne reste plus qu'a determiner les relations existant d'une part entre les objets consideres et d'autre part entre ces objets et l'objet d'affaires. Une instantiation d'un graphique des relations entre les objets et l'objet d'affaire est conservee en memoire.

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Fulltext Availability:  
Detailed Description

#### Detailed Description

... to ensure information integrity across distributed databases. With this feature, a transaction is only committed if two **databases** have the necessary information. If a problem arises on a network connection or a computer, the software...

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DIALOG(R) File 349:PCT FULLTEXT

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00784126

**SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR AN EXCEPTION RESPONSE TABLE IN ENVIRONMENT SERVICES PATTERNS**

**SYSTEME, PROCEDE ET ARTICLE DE PRODUCTION DESTINES A UNE TABLE DE REPONSE D'EXCEPTION DANS DES CONFIGURATIONS DE SERVICES D'ENVIRONNEMENT**

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Inventor(s):

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Patent and Priority Information (Country, Number, Date):

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Application: WO 2000US24086 20000831 (PCT/WO US0024086)

Priority Application: US 99387873 19990831

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LU LV MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR

TT UA UG UZ VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ M RU TJ TM  
Main International Patent Class: G06F-009/44  
Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 150318

#### English Abstract

A system, method and article of manufacture are provided for recording exception handling requirements for maintaining a consistent error handling approach. An exception response table is provided in which an exception is recorded. The context of the exception is entered in the exception response table and a response for the exception is listed in the exception response table. The response is subsequently outputted upon the exception occurring in the context.

#### French Abstract

L'invention concerne un systeme, un procede et un article de production qui permettent d'enregistrer des exigences de traitement d'exception dans le but de maintenir une approche de traitement d'erreurs coherente. Une table de reponse d'exception est fournie et une exception enregistree dans cette table. Le contexte de l'exception est entre dans la table de reponse d'exception apres quoi une reponse pour l'exception est listee dans la table. Cette reponse est ensuite produite si l'exception apparait dans le contexte.

#### Legal Status (Type, Date, Text)

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Examination 20011220 Request for preliminary examination prior to end of  
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#### Fulltext Availability: Detailed Description

#### Detailed Description

... is the only limit on determining the kinds of things that can become objects in objectoriented software. **Some** typical categories are as follows.

Objects can represent physical objects, such as automobiles in a traffic-flow...TOP END; CICS/6000; openUTM; TransIT Open/OLTP  
Transaction Partitioning 2608

Transaction Partitioning Services provide support for **mapping** a single logical transaction in an application into the required multiple physical transactions. For example, in a...to another, manually searching for content they want and "pulling" it back to the desktop via a **graphical** browser. But in the push model, on which subscription servers are based on, content providers can broadcast...

...Services. These services are responsible for collecting, processing, fom-iating, and writing report information (for example, data, **graphics**, text).

Report Distribution Services. These services are responsible for printing, or otherwise distributing, the reports to users...as report type, requester, quantity to be printed, and requested time. Based on the report type, a **table** of reports is examined in order to gather additional report-specific infori-nation and perform required validation  
...

...the report. This function is responsible for formatting the layout of the outputted report, including standard headers, **column** headings, **row** headings, and other static report information.

Collect the information. This function is responsible for collecting the information (for example, data, text, image, **graphics** ) that is required for the report. This function would utilize the Information Access Services component of the...

...or deletion) which is performed by a report manager module.

The report process maintains an internal database **table** , a report status **table** , containing information about each report that has been requested for generation,

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DIALOG(R)File 349:PCT FULLTEXT  
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00382199 \*\*Image available\*\*

**DECONVOLUTION METHOD FOR THE ANALYSIS OF DATA RESULTING FROM ANALYTICAL SEPARATION PROCESSES**

**PROCEDE DE DECONVOLUTION SERVANT A EFFECTUER L'ANALYSE DE DONNEES OBTENUES AU MOYEN DE PROCESSUS DE SEPARATION ANALYTIQUE**

Patent Applicant/Assignee:

THE PERKIN-ELMER CORPORATION,

Inventor(s):

ALLISON Daniel B,  
BOWLBY James O Jr,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9722942 A1 19970626

Application: WO 96US19242 19961202 (PCT/WO US9619242)

Priority Application: US 95579204 19951220

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International Patent Class: G06F-17:15

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 5799

**English Abstract**

An improved signal processing method in a signal processor for performing the deconvolution of a signal resulting from an analytical separation process is disclosed. In a first aspect, a signal representing a plurality of partially separated sample zones is measured, a point-spread-function of the signal is determined, and the Fourier transform of the signal and the point-spread-function is taken. Next, a noise component  $n$  of the signal is determined and the value of a result signal  $A(f)$  is calculated using the following filter  $A(f) = (D(f)P^*(f))/P^*(f)P(f) + n$ , where  $D(f)$  is the Fourier transform of the signal,  $P(f)$  is the Fourier transform of the point-spread-function, and  $P^*(f)$  is the complex conjugate of  $P(f)$ . Finally, the inverse Fourier transform of the result  $A(f)$  is taken and reported as  $A(t)$ . Preferably, the point-spread-function is a Gaussian function having a standard deviation ' $\sigma$ ', where ' $\sigma$ ' is determined using either an ' $\alpha$ '-' $\beta$ ' tracker or the function ' $\sigma = (a+bt^2)^{1/2}$ ', where  $a$  and  $b$  are constants. In a second aspect of the invention, a plurality of possible point-spread-functions of the signal are determined and the above-described method is applied using each PSF. The value of the largest point-spread-function which provides a non-negative result is determined, and the associated value of  $A(t)$  is reported. In a third aspect of the invention, a program storage device readable by a machine, tangibly embodying a program of instructions executable by a machine to perform the method steps of the first or the second aspects of the invention is provided.

## French Abstract

L'invention concerne un procede ameliore de traitement de signaux dans un processeur de signaux, afin d'effectuer la deconvolution d'un signal obtenu au moyen d'un processus de separation analytique. Dans un premier aspect, un signal representant une pluralite de zones echantillons partiellement separees est mesure, une reponse impulsionnelle du signal est determinee et la transformation de Fourier du signal, ainsi que la reponse impulsionnelle, sont etablies. Ensuite, une composante  $n$  de bruit du signal est determinee et la valeur d'un signal de resultat  $A(f)$  est calculee au moyen du filtre suivant  $A(f) = (D(f)P^*(f))/P^*(f)P(f) + n$  dans lequel  $D(f)$  represente la transformation de Fourier du signal,  $P(f)$  represente la transformation de Fourier de la reponse impulsionnelle et  $P^*(f)$  represente le conjuge complexe de  $P(f)$ . Enfin, la transformation inverse de Fourier du resultat  $A(f)$  est etablie et rapportee en tant que  $A(t)$ . De preference, la reponse impulsionnelle est une fonction gaussienne possedant une deviation standard ' $\sigma$ ', ' $\sigma$ ' etant determinee au moyen soit d'un alignement ' $\alpha$ ' ' $\beta$ ', soit la fonction ' $\sigma = (a + bt^2)^{1/2}$ ' dans laquelle  $a$  et  $b$  sont des constantes. Dans un deuxieme aspect de l'invention, une pluralite de reponses impulsionnelles possibles du signal sont determinees et le procede decrit ci-dessus est applique en utilisant chaque PSF. La valeur de la reponse impulsionnelle la plus importante et produisant un resultat non negatif est determinee et la valeur associee de  $A(t)$  est rapportee. Dans un troisieme aspect de l'invention, un dispositif de memorisation de programme pouvant etre lu par une machine, representant de facon tangible un programme d'instructions pouvant etre executees par une machine, sert a executer les etapes du procede du premier ou du deuxieme aspect de l'invention.

## Fulltext Availability:

Claims

## Claim

- ... possible values for the PSF are selected, and the largest value of the PSF which provides a **non - negative result** signal  $A(t)$  in a particular data window is used in the deconvolution method.  
Fourier Transform of...
- ...due to overlap of neighboring sample windows.  
Application of a Noise Filter and Deconvolution  
In order to **reduce** the effect of system noise on the deconvolved result signal  $A(t)$ , prior to deconvolving the transformed...the fluctuations at that frequency is taken as the value of  $n$ . The preferred filter used to **reduce** the effects of the system noise on the deconvolved result is a Weiner filter, e.g., Fundamentatv...End: 10736  
Primer Peak Loc.:1033  
Signal: C (156)0 A (125), G (117)j T (105)  
**Matrix** Name: Machine 1115  
Channels Ave.: 3  
Analysis Vers.: Oersion 2 Od2  
Base Spacing: 8.56 - Basecaller++PPC...
- ...exception that the nucicotide balance was 1( slightly altered. The altered nucleotide balance is shown in the **table** immediately below.  
Reaction ddNTP dNTP  
A 1.25 pM ddA 500 @i.M ea dATP, dCTP, dGTP...
- ...function (PSF) was assumed. The parameters used for the deconvolution in each region are shown in the **table** immediately below.  
Region Sigma I Width Noise  
Early 2.00 4.70 1.00  
Middle 3.00...